

SEQUENCE LISTING

<110> VIITANEN, PAUL V.
MEYER, KNUT
VAN DYK, DREW

<120> HIGH LEVEL PRODUCTION OF P-HYDROXYBENZOIC ACID
IN GREEN PLANTS

<130> BC1015 US NA

<140>

<141>

<160> 16

<170> MICROSOFT OFFICE 97

<210> 1
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PRIMER

<400> 1
ctactcattt catatgtcac accccgcgtt aa 32

<210> 2
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PRIMER

<400> 2
catcttacta gatctttagt acaacggtaa cgcc 34

<210> 3
<211> 495
<212> DNA
<213> Unknown Organism

<220>
<223> Description of Unknown Organism:E. coli

<400> 3
atgtcacacc ccgcgttaac gcaactgcgt gcgctgcgtt attgtaaaga gatccctgcc 60
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cagcaggaa aaacggtaag cgtgacgatg atccgcgaag ggtttgcga gcagaatgaa 180
atccccgaag aactgccgtt gctgccaaa gagtctcggtt actggttacg tgaaattttg 240
ttatgtgccg atggtaacc gtggcttgcc ggtcgtaacc tggttccgtt gtcaacgtt 300
agcggggccgg agctggcggtt acaaaaatttgg ggtaaaacgc cgtaggacg ctatctgttcc 360
acatcatcga cattaaacccg ggacttttggataggcc gtgtatgcgg gctgtggggg 420
cgacgttccc gcctgcgtt aagcggtaaa ccgcgttgc taacagaact gtttttaccg 480
gcgtcaccgt tgtac 495

<210> 4
<211> 165
<212> PRT
<213> Unknown Organism

<220>
 <223> Description of Unknown Organism:E. coli

<400> 4
 Met Ser His Pro Ala Leu Thr Gln Leu Arg Ala Leu Arg Tyr Cys Lys
 1 5 10 15

Glu Ile Pro Ala Leu Asp Pro Gln Leu Leu Asp Trp Leu Leu Glu
 20 25 30

Asp Ser Met Thr Lys Arg Phe Glu Gln Gln Gly Lys Thr Val Ser Val
 35 40 45

Thr Met Ile Arg Glu Gly Phe Val Glu Gln Asn Glu Ile Pro Glu Glu
 50 55 60

Leu Pro Leu Leu Pro Lys Glu Ser Arg Tyr Trp Leu Arg Glu Ile Leu
 65 70 75 80

Leu Cys Ala Asp Gly Glu Pro Trp Leu Ala Gly Arg Thr Val Val Pro
 85 90 95

Val Ser Thr Leu Ser Gly Pro Glu Leu Ala Leu Gln Lys Leu Gly Lys
 100 105 110

Thr Pro Leu Gly Arg Tyr Leu Phe Thr Ser Ser Thr Leu Thr Arg Asp
 115 120 125

Phe Ile Glu Ile Gly Arg Asp Ala Gly Leu Trp Gly Arg Arg Ser Arg
 130 135 140

Leu Arg Leu Ser Gly Lys Pro Leu Leu Leu Thr Glu Leu Phe Leu Pro
 145 150 155 160

Ala Ser Pro Leu Tyr
 165

<210> 5
 <211> 39
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:primer

<400> 5
 ctactcaatt agatctccat ggcttcctct gtcatttct 39

<210> 6
 <211> 32
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:primer

<400> 6
 catcttactc atatgccaca cctgcattgc 32

<210> 7
 <211> 684
 <212> DNA
 <213> Artificial Sequence

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<220>
<223> Description of Artificial Sequence:synthetic CPL

<400> 7
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agcatggtg caccttcac tggtctcaa tcttcagcca ctttccctgt tacaagaag 120
caaaaacctg acatcacttc cattgctagc aatggtgaa gagttagctg catgcaggtg 180
tggcatatgt cacaccccg gttaacgcaa ctgcgtgcgc tgcgttattg taaagagatc 240
cctgcctgg atccgcaact gctcgactgg ctgttgcgg aggattccat gacaaaacgt 300
tttgaacagc agggaaaaac ggttaagcgtg acgtatgcc gcgaagggtt tgtcgagcag 360
aatgaaatcc cccgaagaact gccgctgctg ccgaaagagt ctcgttactg gttacgtgaa 420
attttgttat gtgccgatgg tgaaccgtgg cttgcgggtc gtaccgtcgt tcctgtgtca 480
acgtaagcg ggcggagct ggcgttacaa aaattgggtt aaacgcgtt aggacgttat 540
ctgttcacat catcgacatt aacccgggac ttattgaga tagggcgtga tgccggctg 600
tggggggcgc gttccgcct gcgattaaagc ggttaaccgc tggtaac 660
ttaccggcgt caccgttgta ctaa 684

<210> 8
<211> 227
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:synthetic CPL

<400> 8
Met Ala Ser Ser Val Ile Ser Ser Ala Ala Val Ala Thr Arg Ser Asn
1 5 10 15

Val Thr Gln Ala Ser Met Val Ala Pro Phe Thr Gly Leu Lys Ser Ser
20 25 30

Ala Thr Phe Pro Val Thr Lys Lys Gln Asn Leu Asp Ile Thr Ser Ile
35 40 45

Ala Ser Asn Gly Gly Arg Val Ser Cys Met Gln Val Trp His Met Ser
50 55 60

His Pro Ala Leu Thr Gln Leu Arg Ala Leu Arg Tyr Cys Lys Glu Ile
65 70 75 80

Pro Ala Leu Asp Pro Gln Leu Leu Asp Trp Leu Leu Leu Glu Asp Ser
85 90 95

Met Thr Lys Arg Phe Glu Gln Gln Gly Lys Thr Val Ser Val Thr Met
100 105 110

Ile Arg Glu Gly Phe Val Glu Gln Asn Glu Ile Pro Glu Glu Leu Pro
115 120 125

Leu Leu Pro Lys Glu Ser Arg Tyr Trp Leu Arg Glu Ile Leu Leu Cys
130 135 140

Ala Asp Gly Glu Pro Trp Leu Ala Gly Arg Thr Val Val Pro Val Ser
145 150 155 160

Thr Leu Ser Gly Pro Glu Leu Ala Leu Gln Lys Leu Gly Lys Thr Pro
165 170 175

Leu Gly Arg Tyr Leu Phe Thr Ser Ser Thr Leu Thr Arg Asp Phe Ile
180 185 190

Glu Ile Gly Arg Asp Ala Gly Leu Trp Gly Arg Arg Ser Arg Leu Arg
195 200 205

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Leu Ser Gly Lys Pro Leu Leu Leu Thr Glu Leu Phe Leu Pro Ala Ser
210 215 220

Pro Leu Tyr
225

<210> 9
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer

<400> 9
ctactcattt gaagactgca tgcagggttg gcat 34

<210> 10
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer

<400> 10
catcttactg tcgacttttag tacaacggtg acgc 34

<210> 11
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer

<400> 11
ctactcattt ggccagctct gtcatttctt cagcagc 37

<210> 12
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer

<400> 12
catcttacta gatcttttagt acaacggtg a c 31

<210> 13
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer

<400> 13
cccgggggta cctaaagaag gagtgcgctcg aag 33

<210> 14
<211> 46
<212> DNA
<213> Artificial Sequence

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<220>
<223> Description of Artificial Sequence:primer

<400> 14
gatatcaaggc tttcttagagt cgacatcgat ctagtaacat agatga 46

<210> 15
<211> 62
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:synthetic CPL

<400> 15
Met Ala Ser Ser Val Ile Ser Ser Ala Ala Val Ala Thr Arg Ser Asn
 1           5           10           15

Val Thr Gln Ala Ser Met Val Ala Pro Phe Thr Gly Leu Lys Ser Ser
 20           25           30

Ala Thr Phe Pro Val Thr Lys Lys Gln Asn Leu Asp Ile Thr Ser Ile
 35           40           45

Ala Ser Asn Gly Gly Arg Val Ser Cys Met Gln Val Trp His
 50           55           60

<210> 16
<211> 170
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:synthetic CPL

<400> 16
Met Gln Val Trp His Met Ser His Pro Ala Leu Thr Gln Leu Arg Ala
 1           5           10           15

Leu Arg Tyr Cys Lys Glu Ile Pro Ala Leu Asp Pro Gln Leu Leu Asp
 20           25           30

Trp Leu Leu Leu Glu Asp Ser Met Thr Lys Arg Phe Glu Gln Gln Gly
 35           40           45

Lys Thr Val Ser Val Thr Met Ile Arg Glu Gly Phe Val Glu Gln Asn
 50           55           60

Glu Ile Pro Glu Glu Leu Pro Leu Leu Pro Lys Glu Ser Arg Tyr Trp
 65           70           75           80

Leu Arg Glu Ile Leu Leu Cys Ala Asp Gly Glu Pro Trp Leu Ala Gly
 85           90           95

Arg Thr Val Val Pro Val Ser Thr Leu Ser Gly Pro Glu Leu Ala Leu
100          105          110

Gln Lys Leu Gly Lys Thr Pro Leu Gly Arg Tyr Leu Phe Thr Ser Ser
115          120          125

Thr Leu Thr Arg Asp Phe Ile Glu Ile Gly Arg Asp Ala Gly Leu Trp
130          135          140

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Gly Arg Arg Ser Arg Leu Arg Leu Ser Gly Lys Pro Leu Leu Leu Thr
145 150 155 160

Glu Leu Phe Leu Pro Ala Ser Pro Leu Tyr
165 170